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CORROSION CONTROL SPECIALIST CAREER
LADDER AFSC 53530, 53550, 53570, AND
53690

Air Force Occupational Measurement Center
Lackland Air Force Base, Texas

1 March 1975

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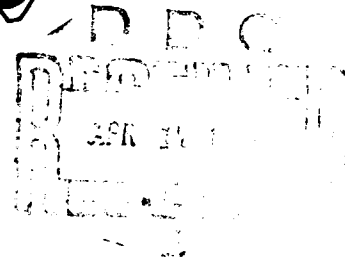
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OCCUPATIONAL SURVEY REPORT

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OCCUPATIONAL SURVEY REPORT
CORROSION CONTROL SPECIALIST CAREER LADDER
AFSC 53530, 53550, 53570, and 53690
AFPT 90-535-149
1 March 1975

OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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TABLE OF CONTENTS

| | PAGE NUMBER |
|--|----------------|
| PREFACE ----- | ii |
| SURVEY FINDINGS ----- | iii |
| INTRODUCTION ----- | iv |
| SURVEY TECHNIQUE ----- | iv |
| IDENTIFICATION OF DUTIES AND TASKS IN FIELD OPERATION ----- | v |
| CAREER LADDER STRUCTURE ----- | vii |
| SURVEY RELATIONSHIPS WITH THE SPECIALTY DESCRIPTION ----- | x |
| SURVEY RELATIONSHIP WITH THE SPECIALTY TRAINING STANDARD AND TRAINING ----- | x |
| ANALYSIS OF DAFSC GROUPS ----- | xii |
| ANALYSIS OF AFMS GROUPS ----- | xix |
| DISCUSSION OF TASK DIFFICULTY ----- | xxiii |
| DISCUSSION OF BACKGROUND INFORMATION ----- | xxvi |

PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Corrosion Control Career Ladder, AFSC's 53530, 53550, 53570, and 53690. The project was directed by USAF Program Technical Training, Volume 2, dated 1 January 1975. Authority for conducting specialty surveys is contained in AFM 35-2, chapter 2, paragraph 2-1. Computer outputs from which this report is produced are available for use by operating and training officials.

The survey project was completed by 1Lt Hendrick W. Ruck, Inventory Development Specialist, and Mr. Guy B. Coie, Analyst, Occupational Survey Branch, USAF Occupational Measurement Center.

Computer programs used in the data analysis were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Because volume reproduction of this report is not feasible, distribution is made on a loan basis to air staff sections and major commands upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland Air Force Base, Texas 78236.

This report has been reviewed and is approved.

LYLE D. KAAPKE, Colonel, USAF
Commander
USAF Occupational Measurement Center

WALTER E. DRISKILL, Ph.D.
Chief, Occupational Survey Branch
USAF Occupational Measurement Center

SURVEY FINDINGS

1. There were 1015 respondents to the survey representing 64 percent of the career field manning. Of these twenty-one percent were in overseas assignments.
2. Training provided in the basic corrosion control course covers the major functions performed by corrosion control personnel in the field.
3. Small percentages of corrosion control personnel apply mechanical or chemical tests in identifying metals. Survey results indicate that metal identification is primarily accomplished by visual comparison techniques and/or by researching technical data.
4. Borescopes were used by only 10 percent of the survey sample. Dial indicators by only 30 percent. Corrosion inspection is normally performed visually without the aid of these specific items of equipment.
5. Write-ins by some members of the career ladder indicated that equipment needed for adequate performance of corrosion control was not available at some locations. Many reported that their job was almost exclusively painting and that they were not performing many of the corrosion control tasks taught in school.
6. Less than half of the members of the career ladder felt that their jobs were interesting, however, sixty percent felt that their talents and training were utilized fairly well or better.
7. Technical task performance across skill levels and AFMS groups is very similar. The addition of supervisory and managerial tasks account for a majority of the changes in job content between skill levels. Few personnel at the 9-skill level perform any technical tasks.

OCCUPATIONAL SURVEY REPORT
CORROSION CONTROL CAREER LADDER
AFSs 535X0 and 53690

INTRODUCTION

This report describes the results of an occupational survey of the Corrosion Control career ladder, AFS 535X0 and 53690, conducted by the Occupational Survey Branch, USAF Occupational Measurement Center, from July 1973 through November 1974. This career ladder includes a variety of jobs performed by airmen in the prevention, identification and control of corrosion on metal surfaces of aircraft, missiles, and support systems within the Air Force. Subject areas investigated in this report include duties and tasks characteristically performed by corrosion control personnel at various stages in their careers from the standpoint of their career progression and time in service. In addition, a variety of background data has been included to reflect individual characteristics of members in composite across the career field and at various intervals in their career progression and time in the career field.

In addition comparisons have been made between field performance and items in the Specialty Training Standard.

A short discussion of the relative difficulty of tasks as rated by personnel of the career field has also been included.

SURVEY TECHNIQUE

Research of pertinent publications, AFM 39-1 job descriptions, career development courses and contacts with course personnel at Sheppard AFB provided information for the initial draft of the task inventory and background items important to the analysis of this career ladder. Interviews with subject matter specialists were then conducted at their respective work sites to obtain additional task and background information from specialists and technicians engaged in the day-to-day activities of corrosion control. The information gathered in these contacts was carefully analyzed and incorporated into a tentative inventory. Seventy-eight copies of this inventory were distributed for review and comment to specialists at 34 bases representing all major commands. Recommendations made by the respondents to the tentative inventory were carefully considered and where appropriate consolidated into the final inventory. In June 1974, the final inventory was mailed to Test Control officers for administration to technicians in the career ladder, Air Force wide.

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Upon completion of the identification and biographical sections of the inventory each respondent checked and time rated those tasks which he performed in his current job. Tasks were time rated on a 9-point scale showing relative time spent on each task in his current job compared to all other tasks performed. The ratings ranged from 1 (very small amount of time spent) through 5 (about average amount of time spent) to 9 (very large amount of time spent).

The data obtained through administration of these inventories was analyzed and serves as the basis for this report. Survey statistics are shown in Table 1. Table 2 depicts command representation in the survey.

IDENTIFICATION OF DUTIES AND TASKS IN FIELD OPERATION

During development of the inventory, extensive effort was made to insure that all duties and tasks were included. However, to allow for possible omissions, blank pages were included in the inventory with instructions urging respondents to write-in any additional tasks performed.

Each write-in was carefully reviewed and no important duty or task was found to have been omitted. A number of comments were received with regard to the preponderance of painting tasks as opposed to those tasks involving location, identification and treatment of corrosion. For example, a number of respondents reported that the corrosion control program at their duty station consisted of removing rust or corrosion with a wire brush and touching up with a spray can of primer. Many complained that needed corrosion control equipment and supplies were not available and as a result, that corrosion control was not performed as it should be. Other comments reflect that, in many instances, assignments did not provide opportunities for the specialist to perform the more difficult phases of corrosion control. Consequently, for these individuals, the theories and procedures relating to location, diagnosis and treatment of corrosion on a variety of different metals, were seldom if ever utilized.

TABLE 1

PREPARATION OF JOB INVENTORY

| | | |
|---------------|----------|----------------|
| INTERVIEWS | 3 BASES | 9 PERSONNEL |
| FIELD REVIEWS | 34 BASES | 59 INVENTORIES |

USAF JOB INVENTORY CONTENT

| | |
|------------------|-----|
| BACKGROUND ITEMS | 177 |
| DUTY SECTIONS | 16 |
| TASKS | 457 |

DATES OF FIELD ADMINISTRATION OF JOB INVENTORY

24 JUNE TO 23 SEPTEMBER 1974

PERCENT OF MANNING
64%

INCUMBENT LOCATION

| | |
|----------|-----|
| CONUS | 79% |
| OVERSEAS | 21% |

TABLE 2

ASSIGNED STRENGTH VERSUS SURVEY RETURNS

| <u>COMMAND</u> | <u>PERCENT OF ASSIGNED STRENGTH</u> | <u>PERCENT OF TOTAL SAMPLE</u> |
|----------------|---|------------------------------------|
| SAC | 34 | 37 |
| TAC | 22 | 24 |
| ATC | 11 | 7 |
| MAC | 10 | 8 |
| PACAF | 9 | 9 |
| USAFE | 6 | 6 |
| ADC | 4 | 4 |
| AFSC | 2 | 2 |
| AAC | 1 | 1 |
| OTHER (MISC) | <u>1</u> | <u>2</u> |
| | 100 | 100 |

CAREER LADDER STRUCTURE

Prior to detailing the structure of this career ladder, an explanation of the relationship among duties and tasks will be useful. Usually, work performed is composed of general duties and specific tasks; these together develop the career field structure. These duties and tasks reflect the knowledges and skills that must be applied or utilized in job performance. In fact, the structure of a career field is based on the identification of groups of individuals who use or possess similar skills, knowledges, or experience. Career fields are arranged on the basis of these factors, plus the transferability of these capacities from one set of tasks to another.

One important purpose of occupational surveys is to formulate an accurate description of the structure of the career field examined. The computer programs used to analyze this survey determine the extent of similarity among individuals and groups based on the tasks performed and the amount of time spent on those tasks. In that way individuals and groups of individuals found in "Job Types" or "Job Clusters" are there solely on the basis of what they do, not their grade, DAFSC, or time in service. "Job Types" are simply more specific and narrowly defined than "Job Clusters" and usually a cluster contains two or more job types.

- GRP176 - CREW CHIEFS (C)
- GRP119 - CORROSION INSPECTION, REMOVAL AND TREATMENT SPECIALIST I (C)
- GRP101 - TEAM CHIEF/INSPECTOR (T)
- GRP075 - CORROSION INSPECTION, REMOVAL AND TREATMENT SPECIALIST II (C)
- GRPU94 - CORROSION INSPECTION AND SURFACE PREPARATION SPECIALIST (T)
- GRP160 - CORROSION INSPECTION AND REMOVAL SPECIALIST (T)
- GRP223 - TITAN MISSILE CORROSION CONTROL SPECIALIST (T)
- GRP251 - TITAN/MINUTEMAN CORROSION CONTROL SPECIALIST (T)
- GRP309 - TITAN MISSILE CORROSION CONTROL SUPERVISOR (T)
- GRP117 - MINUTEMAN MISSILE CORROSION CONTROL SPECIALIST (C)
- GRP126 - TRAINING INSTRUCTORS (T)
- GRP082 - SPRAY PAINTERS I (T)
- GRP093 - AIRCRAFT WASHERS (T)
- GRP069 - SPRAY PAINTERS II (T)
- GRP177 - FABRICATION BRANCH CHIEFS I (C)
- GRP171 - SHOP CHIEFS I (T)
- GRP144 - SHOP CHIEFS II (C)
- GRP107 - ASSISTANT SHOP CHIEFS (C)
- GRP084 - SHOP CHIEFS III (T)
- GRPU44 - FABRICATION BRANCH CHIEFS II (T)

The career ladder structure chart, Figure 1, shows the general relationships between different types of jobs performed by personnel of this career ladder. In general tasks performed by personnel of this ladder are very homogeneous in that a large number of personnel perform similar types of tasks and utilize similar equipment. Essentially there are only five functionally different types of jobs in the ladder. These include specialists working on aircraft and AGE, missile specialists, training instructors, specialists who perform primarily painting and/or cleaning tasks, and several different levels of supervisors. Within each of these general groups or clusters, nonsupervisory personnel were grouped into job types or clusters based primarily upon the number of tasks performed and differing amounts of time spent applying protective coatings, removing corrosion and protective coatings, washing aircraft and AGE, and performing general corrosion control functions. Supervisory positions were grouped primarily by level of supervision with superintendents performing supervisory tasks almost exclusively and lower level supervisors spending proportionally more time in administrative and technical tasks. As in the technical groups, the number of tasks performed and the varying amounts of time spent on various supervisory duties was a factor in separating supervisors of the same level.

There was no evidence in the clustering process to indicate that there were significant differences in jobs based on command or between CONUS or overseas locations. Each of the above groups are described in Appendix A.

SURVEY RELATIONSHIPS WITH THE SPECIALTY DESCRIPTION

Corrosion Control Specialists and Technicians as a group perform all of the duties and most of the tasks outlined in the airman specialty description in AFM 39-1. Primary tasks (those occupying the most time) performed by the total sample consist of cleaning facilities followed by a variety of protective coatings application tasks. Removing corrosion by mechanical means (using hand wire brushes, hand abrasives and finishing surfaces by hand) are the most common methods of removing corrosion, however, over half of the total group also remove corrosion using pneumatic buffers, grinders or sanders. Seventy percent of the total sample identify types of corrosion. Thirty-four percent reported that they identified metals using visual comparison techniques. Thirty-two percent identify metals by researching technical data, however, less than 15 percent used any one of the following tests in identifying metals: magnetic tests; acid tests; alkaline tests; spark tests; hardness tests; heat tests; or fracture tests. Only five percent compare metal identification results with blueprints. Obviously metal identification in the field is accomplished by means other than by these established tests. Consequently the question arises as to the propriety of inclusion of these tests in the 39-1 job description, STS, and particularly the training course.

Although the removal of protective coatings can be assumed, the degree of activity in this area would appear to justify some mention in the job description of those tasks associated with inspection and removal of protective coatings which do not meet standards and/or where removal is required prior to refinishing.

Aside from the above comments, the specialty description adequately describes corrosion control functions as performed by survey respondents.

SURVEY RELATIONSHIP WITH THE SPECIALTY TRAINING STANDARD AND TRAINING

The first six paragraphs of the Specialty Training Standard (STS) cover general subjects which are not specific to corrosion control. These subjects have not been evaluated in this report. The technical knowledges and skills as reflected in paragraph 7 through 13 form the basis for the following comments.

Corrosion principles as outlined in paragraph 7 are basic to knowledge requirements of this ladder. Fifty-seven percent of the respondents reported that they identified causes of corrosion while seventy percent indicated that they identified types of corrosion.

Paragraph 8, characteristics of metals and alloys is also fundamental to corrosion control. The data shows that respondents determine types of metals primarily by the visual comparison methods and do not in most cases employ mechanical or chemical tests for metal identification. Specifications in technical publications and standard code markings appear to be the most used methods of identification. In view of this, items 8.c. (2) and (3) should be reviewed for continued inclusion in the STS at the present code levels. Of the seven metal identification tests included in the inventory, only acid and magnetic tests are employed by as many as 10 percent of the first term enlistment group.

Proficiency levels, established in paragraph 9, (Preparation of metal surfaces for treatment of corrosion) are fully supported by survey results. Cleaning, whether for corrosion prevention or treatment, is one of the primary functions of personnel in this career field. Survey results show that 82 percent of the first assignment personnel perform tasks in Duty G (Washing Aircraft and Aerospace Ground Equipment). This percentage remains essentially constant for personnel in all AFMS groups through the fourth enlistment.

Tasks related to paragraph 10 (Corrosion Inspection) are performed by a majority of the respondents to the survey. Such equipment as flashlights, magnifying glasses, lite-alls and inspection mirrors were used by high percentages of personnel. Borescopes and dial indicators were used by relatively small percentages. Only 10 percent of all respondents reported use of borescopes. While 30 percent of the sample reported use of dial indicators in determining depth of corrosion, only 20 percent of the first job group and 26 percent of the first enlistment group use this equipment. The inclusion of these two instruments in the STS should be re-evaluated to determine the need for current proficiency levels and to assess the requirement for formal training in the basic course, especially in the use of the borescope.

Corrosion removal (STS paragraph 11) is also a basic part of the function of this career ladder. Although the hand method of removal of corrosion is utilized by the higher percentages of the respondents, a significant number also use pneumatic powered equipment and sand blasters to remove corrosion. Less than 20 percent of the respondents in their first enlistment reported the use of electric powered sanders, buffers or grinders. Only in the case of aluminum was corrosion removing compound used by over 30 percent of first term personnel. The skills and knowledge levels of this paragraph appear to adequately cover this aspect of the job, however, training personnel should review the specific course content to insure the proper emphasis on techniques which are the most likely to be used by personnel in their first enlistment.

In the treatment of metal surfaces, paragraph 12 of the STS, relatively small percentages prepare chemical solutions for passivation of metal surfaces. Chromate conversion coatings applied using spray methods are performed by 33 percent of the first enlistment group and 31 percent of the total sample, while 19 percent of the first enlistment group apply chromate conversion coatings using brush methods. Passivation of metals other than aluminum and its alloys is performed only to a limited degree. For example, only 12 percent of the first enlistment group and 15 percent of the total sample reported application of passivating solutions to magnesium or its alloys using the brush method, seven percent by immersion method, and 10 percent by spray methods.

The application of protective coatings (STS paragraph 13) is a major part of this career ladders work. Members of the 6-12 month AFMS group spend over one-third of their time in performance of tasks from this duty. In fact, all personnel in their first 12 years in the career ladder spend in excess of 30 percent of their time in tasks relating to the application of protective coatings. The subject areas and code levels within this section of the STS are fully substantiated by survey results. Training conducted in the basic course appears to adequately cover this portion of career field functions.

ANALYSIS OF DAFSC GROUPS

Figure 2 graphically portrays technical and supervisory tasks performed by 30 percent or more of the members of the survey sample and of each skill level. The number of technical tasks performed by 30 percent or more respondents at each skill level varies little from the 3 through the 7-skill level. Further analysis shows that for the most part, tasks performed by 30 percent or more 3-skill level personnel are also those performed by 30 percent or more of the 5- and 7-skill level groups. Consequently, in this career field, job progression is primarily reflected in the assumption of supervisory and administrative functions rather than in the technical functions performed.

Semi-skilled airmen (53530) in this career ladder perform a relatively large number of tasks. One-third of the tasks performed by 30 percent or more respondents from this skill level were from Duty K (Applying Protective Coating Systems). These tasks occupied approximately 30 percent of this groups work time and included such tasks as: preparing and applying primers and protective coatings such as lacquers, enamels, polyurethane coatings, epoxy and elastomeric coatings using spray method; removing, cutting or applying stencils and decals; painting building interiors; and performing a variety of additional tasks incidental to protective coating application such as preparing surfaces and performing

operator maintenance and cleaning of equipment. Approximately 20 percent of the work time of this group is spent on performing corrosion control functions including such functions as cleaning facilities, assembling corrosion control supplies and equipment for specific jobs, storing or disposing of corrosion control materials, loading and unloading supplies, and finish sanding surfaces prior to applying protective coatings. Another 16 percent of this groups time is spent on corrosion and protective coating removal while washing aircraft and AGE occupies 11 percent of their work time.

Skilled airmen (53550) perform almost identical duties and tasks as the semi-skilled (53530). The primary differences between these two skill levels are that the 5-skill level worker performs on the average approximately 15 more technical tasks than the 3-skill level. Typically these reflect the additional knowledges and skills acquired by on-the-job performance. Table 3 lists those tasks which most clearly differentiate between these two skill levels.

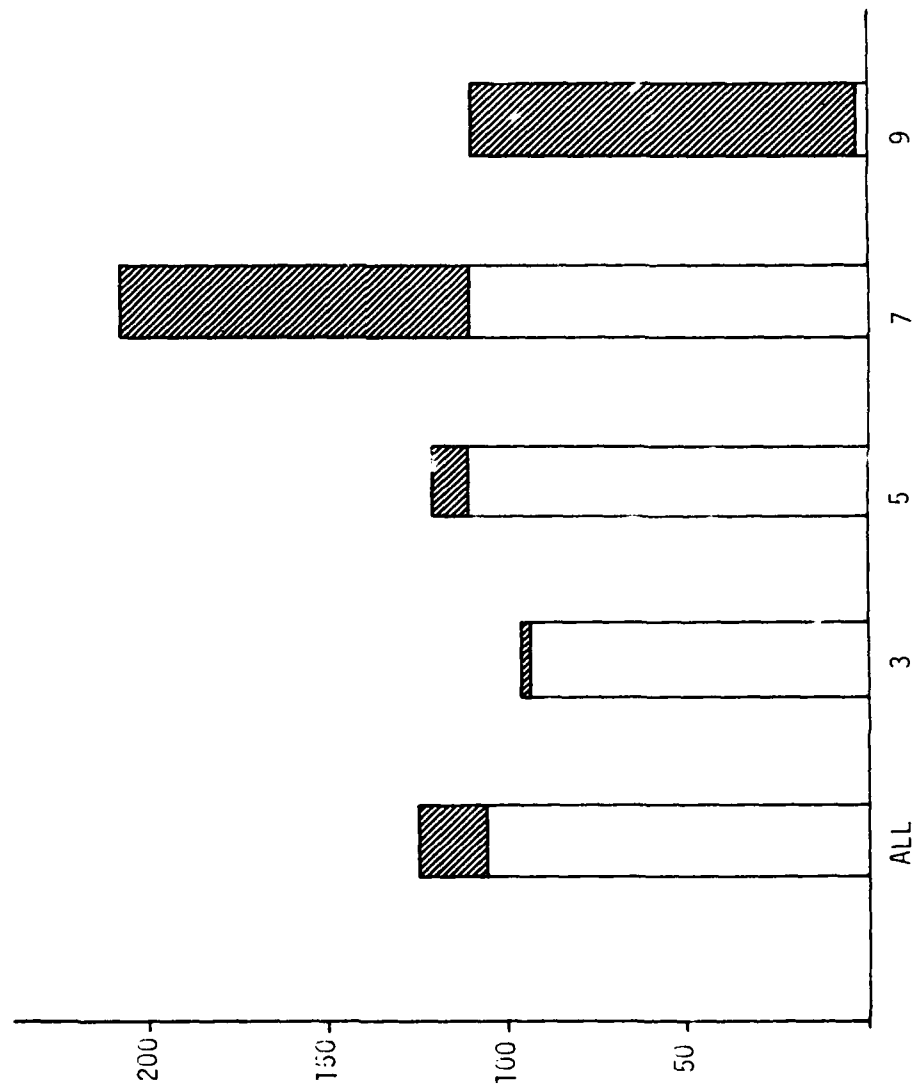
Technicians perform the same technical tasks performed by specialists and in addition perform a large number of supervisory tasks. These tasks reflect a normal supervisory structure in which 7-skill level personnel serve in first and second level supervisory positions directing the day to day activities of a crew, a shop or, in some cases, a section. Table 4 shows tasks which are most significant in reflecting differences between the 5- and 7-skill levels. As expected, these tasks are all within supervisory and administrative duty areas. In technical task performance less pronounced differences occur between these skill levels as shown in Table 5.

Superintendents included in this survey are almost all Fabrication Branch Superintendents and as such supervise corrosion control functions through subordinate corrosion control supervisors. Most have advanced to the 9-skill level through other metal working career ladders and have acquired corrosion control skills and knowledges from long experience in the metal working trades rather than through a specialized corrosion control course. The only technical task performed by 30 percent or more of this group is "Identifying types of corrosion", accomplished by 35 percent. As branch supervisors these personnel perform supervisory and managerial tasks, and rely on subordinate supervisors to direct the day-to-day operation and supervision of corrosion control. Table 6 shows performance of supervisory and managerial functions as the primary difference between the 7- and 9-skill levels.

FIGURE 2

SUPERVISORY AND ADMINISTRATIVE TASKS
 DUTIES A THRU E

TECHNICAL TASKS
 DUTIES F THRU P



TECHNICAL VERSUS SUPERVISORY TASKS PERFORMED BY SKILL LEVEL GROUPS
 30 PERCENT OR MORE PERFORMING

TABLE 3
PERFORMANCE OF TASKS WHICH MOST CLEARLY DIFFERENTIATE 3- AND 5- SKILL LEVELS

| TASK | PERCENT PERFORMING | | DIFFERENCE |
|--|--------------------|---------------|------------|
| | 3-SKILL LEVEL | 5-SKILL LEVEL | |
| B-26 SUPERVISE CORROSION CONTROL SPECIALISTS (AFSC 53550 PERSONNEL) | 6 | 30 | 24 |
| B-24 SUPERVISE APPRENTICE CORROSION CONTROL SPECIALISTS (AFSC 53530 PERSONNEL) | 11 | 34 | 23 |
| C-21 INSPECT OR CLEAR RED/DIAGONAL CONDITIONS | 26 | 48 | 22 |
| E-25 MAKE ENTRIES ON MAINTENANCE DISCREPANCY AND WORK DOCUMENT FORMS (AFTO FORM 781A) | 28 | 44 | 26 |
| F-13 DRIVE GOVERNMENT VEHICLES | 19 | 38 | 19 |
| H-6 IDENTIFY PROTECTIVE COATING SYSTEMS | 43 | 65 | 22 |
| H-5 IDENTIFY CAUSES OF PROTECTIVE COATING FAILURES | 37 | 56 | 19 |
| I-10 IDENTIFY METALS USING VISUAL COMPARISON TECHNIQUES | 20 | 36 | 16 |
| M-18 INSPECT STENCIL MACHINES | 25 | 45 | 20 |
| M-24 PERFORM OPERATOR MAINTENANCE ON CONVENTIONAL SPRAY EQUIPMENT | 42 | 60 | 18 |
| A-9 COORDINATE WITH MAINTENANCE OR JOB CONTROL ON FLIGHT LINE DISPATCH WORK | 31 | 49 | 18 |
| M-11 DRAIN SHOP AIR LINES | 35 | 53 | 18 |
| H-3 EVALUATE EXTENT OF CORROSION DAMAGE | 44 | 60 | 16 |

TABLE 4

PERFORMANCE OF TASKS WHICH MOST CLEARLY DIFFERENTIATE 5- AND 7-SKILL LEVELS

| TASK | PERCENT PERFORMING | | PERCENT DIFFERENCE |
|--|--------------------|---------------|--------------------|
| | 5-SKILL LEVEL | 7-SKILL LEVEL | |
| B-3 COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED PROBLEMS | 15 | 72 | 57 |
| A-23 PLAN OR SCHEDULE WORK ASSIGNMENTS | 22 | 76 | 54 |
| A-22 PLAN OR SCHEDULE ON-THE-JOB TRAINING (OJT) | 13 | 64 | 51 |
| A-3 ASSIGN SPONSORS FOR NEWLY ASSIGNED PERSONNEL | 8 | 54 | 46 |
| B-7 DIRECT MAINTENANCE OR UTILIZATION OF CORROSION SHOP EQUIPMENT | 24 | 72 | 48 |
| B-18 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES | 10 | 56 | 46 |
| B-26 SUPERVISE CORROSION CONTROL SPECIALISTS (AFSC 53550) PERSONNEL | 30 | 82 | 52 |
| C-22 INSPECT OR CLEAR RED X CONDITIONS | 21 | 72 | 51 |
| D-2 ASSIGN OJT TRAINERS | 3 | 48 | 45 |
| D-9 COUNSEL TRAINEES ON TRAINING PROGRESS | 13 | 62 | 49 |
| D-10 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION | 19 | 69 | 50 |
| D-17 EVALUATE OJT TRAINEES | 11 | 58 | 47 |
| D-21 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS | 11 | 56 | 45 |
| E-7 FILE GENERAL CORRESPONDENCE | 10 | 60 | 50 |
| E-2 COMPILE REPORTS OR RECORDS FROM DATA ON MANHOURLY ACCOUNTING FORMS | 6 | 51 | 45 |
| E-33 REVIEW, MAKE ENTRIES ON, OR MAINTAIN MASTER ROSTERS | 9 | 64 | 55 |

TABLE 5

TECHNICAL TASKS WHICH DIFFERENTIATE 5- AND 7-SKILL LEVELS

| TASK | PERCENT PERFORMING | | PERCENT DIFFERENCE |
|--|--------------------|---------------|--------------------|
| | 5-SKILL LEVEL | 7-SKILL LEVEL | |
| I-9 IDENTIFY METALS BY RESEARCHING TECHNICAL DATA | 27 | 53 | 26 |
| H-1 BRIEF TECHNICIANS PRIOR TO DISPATCH | 13 | 37 | 24 |
| I-17 INSPECT SAFETY EQUIPMENT | 40 | 64 | 24 |
| I-18 INSPECT STENCIL MACHINES | 45 | 63 | 18 |
| H-19 INSPECT WET SPRAY BOOTHS | 35 | 53 | 18 |
| I-26 PERFORM PERIODIC INSPECTIONS OF COMPRESSORS | 19 | 36 | 17 |
| I-1 ADD OIL TO COMPRESSORS | 19 | 36 | 17 |
| J-1 APPLY CHROMATE CONVERSION COATINGS USING BRUSH METHODS | 23 | 39 | 16 |
| M-27 PERFORM PERIODIC INSPECTIONS OF ELECTRONIC OR PNEUMATIC CORROSION REMOVAL EQUIPMENT | 23 | 39 | 16 |
| G-11 EVALUATE EXTENT OF SPILLAGE OF CORROSIVE MATERIALS | 9 | 24 | 15 |
| H-3 EVALUATE EXTENT OF CORROSION DAMAGE | 60 | 75 | 15 |
| H-5 IDENTIFY CAUSES OF PROTECTIVE COATING FAILURES | 59 | 71 | 15 |
| H-8 IDENTIFY TYPES OF PROTECTIVE COATING FAILURES | 49 | 64 | 15 |

TABLE 6

PERFORMANCE OF SUPERVISORY TASKS WHICH MOST CLEARLY DIFFERENTIATE 7- AND 9-SKILL LEVELS

| TASK | | PERCENT PERFORMING | | PERCENT DIFFERENCE |
|------|--|--------------------|---------------|--------------------|
| | | 7-SKILL LEVEL | 9-SKILL LEVEL | |
| A-17 | ESTABLISH ORGANIZATIONAL POLICES, OFFICE INSTRUCTIONS (OI), OR STANDING OPERATING PROCEDURES (SOP) | 30 | 84 | 54 |
| B-2 | CONDUCT OR PARTICIPATE IN STAFF MEETINGS | 29 | 80 | 51 |
| B-24 | SUPERVISE APPRENTICE CORROSION CONTROL SPECIALISTS (AFSC 53530 PERSONNEL) | 68 | 18 | 50 |
| B-26 | SUPERVISE CORROSION CONTROL SPECIALISTS (AFSC 53550 PERSONNEL) | 82 | 14 | 68 |
| C-6 | EVALUATE BUDGETING AND FINANCIAL REQUIREMENTS | 11 | 57 | 46 |
| E-24 | MAINTAIN SUPPLY CONTROL LOG FORMS (AF FORM 2413) | 58 | 18 | 40 |
| E-23 | MAINTAIN SPECIALIST DISPATCH CONTROL LOG FORMS (AF FORM 2430) OR SPECIALIST PLANNING CHARTS | 59 | 16 | 43 |
| A-2 | ASSIGN SPONSORS FOR NEWLY ASSIGNED PERSONNEL | 59 | 90 | 41 |
| A-15 | DEVELOP ORGANIZATIONAL CHARTS | 23 | 65 | 42 |
| A-16 | DRAFT BUDGET OR FINANCIAL REQUIREMENTS | 13 | 53 | 40 |
| C-7 | EVALUATE COMPLETED SPECIAL PROJECTS | 33 | 75 | 42 |
| C-10 | EVALUATE INDIVIDUALS FOR PROMOTION, DEMOTION OR RECLASSIFICATION | 36 | 78 | 42 |
| C-11 | EVALUATE INSPECTION REPORTS OR PROCEDURES | 39 | 80 | 41 |

ANALYSIS OF AFMS GROUPS

Except for supervisory and managerial tasks performed by personnel in the second and subsequent enlistments, there were only minor differences in task performance across the AFMS groups. For example, all but one task performed by 30 percent or more of the 6-12 month AFMS group were performed by 30 percent or more of all AFMS groups through the third enlistment. Of 140 tasks performed by 25 percent or more of all the respondents, 109 tasks (78 percent) were performed by 25 percent or more of the members of each of the first through the fourth enlistment groups.

Table 7 lists tasks which clearly point out that the most significant differences between the first and second enlistment groups are supervisory and administrative tasks. Less significant are the differences in percent performing technical tasks as shown in Table 8.

Table 9 shows the gradual shift from 90 percent time spent in performance of technical tasks in the first job to 46 percent time spent in the performance of supervisory and administrative tasks in the fourth enlistment. In addition, this chart emphasizes the relative importance of work performed in the major technical duty areas and in the administrative and supervisory duty areas during each of the listed periods of time in service.

TABLE 7

PERFORMANCE OF SUPERVISORY AND ADMINISTRATIVE TASKS WHICH MOST CLEARLY DIFFERENTIATE
BETWEEN FIRST AND SECOND ENLISTMENT GROUPS

| TASK | PERCENT PERFORMING | | | DIFFERENCE |
|--|---------------------|----------------------|----|------------|
| | FIRST ENLISTMENT | SECOND ENLISTMENT | | |
| B-26 SUPERVISE CORROSION CONTROL SPECIALISTS (AFSC 53550 PERSONNEL) | 17 | 58 | 41 | |
| A-23 PLAN OR SCHEDULE WORK ASSIGNMENTS | 13 | 46 | 36 | |
| B-24 SUPERVISE APPRENTICE CORROSION CONTROL SPECIALISTS (AFSC 53530 PERSONNEL) | 24 | 54 | 30 | |
| C-22 INSPECT OR CLEAR RED X CONDITIONS | 13 | 41 | 28 | |
| D-9 COUNSEL TRAINEES ON TRAINING PROGRESS | 6 | 34 | 28 | |
| A-22 PLAN OR SCHEDULE ON-THE-JOB TRAINING (OJT) | 8 | 35 | 27 | |
| E-24 MAINTAIN SUPPLY CONTROL LOG FORMS (AF FORM 2413) | 9 | 35 | 26 | |
| B-7 DIRECT MAINTENANCE OR UTILIZATION OF CORROSION SHOP EQUIPMENT | 17 | 43 | 26 | |
| B-4 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES | 21 | 47 | 26 | |
| D-5 CONDUCT OJT | 10 | 36 | 26 | |
| D-10 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION | 13 | 38 | 25 | |
| D-17 EVALUATE OJT TRAINEES | 5 | 30 | 25 | |
| D-21 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS | 5 | 30 | 25 | |
| E-23 MAINTAIN SPECIALIST DISPATCH CONTROL LOG FORMS (AF FORM 2430) OR SPECIALIST PLANNING CHARTS | 11 | 36 | 25 | |

TABLE 8

PERFORMANCE OF TECHNICAL TASKS WHICH DIFFERENTIATE
BETWEEN FIRST AND SECOND ENLISTMENT GROUPS

| TASK | PERCENT PERFORMING | | |
|--|---------------------|----------------------|------------|
| | FIRST ENLISTMENT | SECOND ENLISTMENT | DIFFERENCE |
| M-17 INSPECT SAFETY EQUIPMENT | 31 | 56 | 25 |
| M-18 INSPECT STENCIL MACHINES | 35 | 59 | 24 |
| M-14 FILL BOILERS | 52 | 72 | 20 |
| I-55 RESEARCH TECHNICAL DATA TO IDENTIFY PROTECTIVE COATINGS | 38 | 60 | 22 |
| H-4 IDENTIFY CAUSES OF CORROSION | 49 | 68 | 19 |
| H-5 IDENTIFY CAUSES OF PROTECTIVE COATING FAILURES | 49 | 67 | 18 |
| H-6 IDENTIFY PROTECTIVE COATING SYSTEMS | 59 | 74 | 16 |
| H-8 IDENTIFY TYPES OF PROTECTIVE COATING FAILURES | 43 | 63 | 20 |
| I-9 IDENTIFY METALS BY RESEARCHING TECHNICAL DATA | 23 | 38 | 15 |
| F-13 DRIVE GOVERNMENT VEHICLES | 31 | 45 | 14 |
| F-24 MAINTAIN FLIGHT LINE PAINT CARTS OR OUTSIDE STORAGE FACILITIES | 48 | 62 | 14 |
| K-34 FABRICATE LETTER STENCILS BY HAND | 55 | 69 | 14 |
| M-19 INSPECT WET SPRAY BOOTHS | 30 | 45 | 15 |

TABLE 9

PERCENT TIME SPENT ON TECHNICAL VERSUS SUPERVISORY DUTIES BY AFMS GROUPS

| TECHNICAL DUTIES | MONTHS AFMS | | | | | |
|---|-------------|------|-------|--------|---------|------|
| | 6-12 | 1-48 | 49-96 | 97-144 | 145-240 | 241+ |
| K APPLYING PROTECTIVE COATING SYSTEMS | 33 | 31 | 24 | 22 | 12 | 1 |
| F PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 19 | 18 | 15 | 13 | 8 | 1 |
| I REMOVING CORROSION AND PROTECTIVE COATINGS | 16 | 15 | 13 | 12 | 8 | 1 |
| II MAINTAINING CORROSION CONTROL EQUIPMENT | 8 | 9 | 9 | 9 | 7 | 3 |
| G WASHING AIRCRAFT AND AEROSPACE GROUND EQUIPMENT (AGE) | 9 | 8 | 6 | 5 | 5 | 1 |
| H INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 5 | 6 | 7 | 6 | 6 | 1 |
| OTHER TECHNICAL | 4 | 5 | 4 | 6 | 3 | 1 |
| TOTAL TECHNICAL | 94 | 92 | 78 | 73 | 49 | 11 |
| ADMINISTRATIVE AND SUPERVISORY DUTIES | | | | | | |
| E WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, AND TECHNICAL DATA | 2 | 2 | 6 | 8 | 14 | 1 |
| A ORGANIZING AND PLANNING | 2 | 2 | 5 | 6 | 11 | 1 |
| B DIRECTING AND IMPLEMENTING | 1 | 2 | 5 | 6 | 11 | 1 |
| C INSPECTING AND EVALUATING | 1 | 1 | 3 | 4 | 8 | 1 |
| D TRAINING | 0 | 1 | 3 | 3 | 7 | 1 |
| TOTAL ADMINISTRATIVE AND SUPERVISORY | 6 | 8 | 22 | 27 | 51 | 5 |

DISCUSSION OF TASK DIFFICULTY

Through research accomplished by the Personnel Research Division, Air Force Human Resources Laboratory, methods of determining task difficulty have been established. This research demonstrated that a group of supervisors familiar with the tasks of a career ladder could accurately rate the difficulty of each task as compared to other tasks performed by incumbents of the career ladder.

Most of the task difficulty ratings in this survey were obtained from 7-skill level supervisors since 9-skill level supervisors were normally from other ladders of the career field and were therefore less knowledgeable of the day-to-day technical tasks involved in corrosion control. Each selected supervisor was asked to rate on a 7-point scale, each task as to its difficulty in terms of time required to become proficient at the task in comparison to all other tasks, using as a frame of reference tasks that fell at or near the middle of the difficulty range for judging the difficulty of all other tasks.

Results of the ratings of task difficulty in this survey are shown in TSKDF1 which lists tasks in alpha-numerical order as they appear in the job inventory. Opposite each of the task numbers and titles is the difficulty index (shown in the second column). (Note: The difficulty index is based on a mean of five with a standard deviation of one). This listing, with additional information identified in the column headings makes it easy for the user to find the difficulty index of any task in the inventory. For example, if the user wants to know the task difficulty index for task K-44, he would refer to alpha-numeric position of task K-44 and read the second column, in this case 50 percent.

The task difficulty index can be used in a variety of ways. It can provide training course developers with valuable information concerning relative difficulty of various tasks as performed in the field, thereby providing assistance in determining training emphasis on theory, principles, or procedures associated with task information. In addition, it can be used by supervisors to determine the most appropriate task assignments for various skill levels to achieve acceptable results with minimum supervision and guidance. For example, tasks with high difficulty levels should normally be assigned to the more experienced personnel while limited experience personnel can normally be expected to perform tasks with low difficulty levels.

The 10 most difficult tasks performed by 30 percent or more of the members of this career ladder are shown in Table 10. This career ladder is somewhat unique in that only four of the 10 most difficult tasks are from supervisory duties. (Only in these tasks is there significant differences in percent performance across the career ladder.) Although 7-skill level personnel report high performance in these tasks, substantial numbers of 3-skill level personnel also perform these tasks. Similarly, Table 11 shows relatively insignificant differences across the career ladders in performance of the least difficult tasks.

TABLE 10

MOST DIFFICULT TASKS PERFORMED BY 30 PERCENT OR MORE 535X0 PERSONNEL

| TASK | TASK DIFFICULTY | PERCENT MEMBERS PERFORMING | | | | |
|------|--|----------------------------|-------|-------|-------|-------|
| | | 535X0 | 53530 | 53550 | 53570 | 53690 |
| C-22 | INSPECT OR CLEAR RED X CONDITIONS | 34 | 10 | 21 | 72 | 63 |
| H-3 | EVALUATE EXTENT OF CORROSION DAMAGE | 61 | 44 | 60 | 75 | 49 |
| A-9 | COORDINATE WITH MAINTENANCE OR JOB CONTROL ON FLIGHT LINE DISPATCH WORK | 55 | 31 | 49 | 74 | 86 |
| B-4 | DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES | 40 | 14 | 29 | 73 | 30 |
| B-3 | COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED PROBLEMS | 31 | 7 | 15 | 72 | 84 |
| K-20 | APPLY POLYURETHANE COATINGS TO SURFACES USING SPRAY METHODS | 68 | 75 | 77 | 58 | 0 |
| K-14 | APPLY EPOXY COATINGS TO SURFACES USING SPRAY METHODS | 67 | 71 | 76 | 54 | 0 |
| H-4 | IDENTIFY CAUSES OF CORROSION | 57 | 45 | 56 | 70 | 27 |
| H-5 | IDENTIFY CAUSES OF PROTECTIVE COATING FAILURES | 56 | 37 | 56 | 71 | 22 |
| H-6 | IDENTIFY PROTECTIVE COATING SYSTEMS | 56 | 43 | 65 | 76 | 18 |

TABLE 11

LEAST DIFFICULT TASKS PERFORMED BY 30 PERCENT OR MORE 535X0 PERSONNEL

| TASK | TASK DIFFICULTY | PERCENT MEMBERS PERFORMING | | | |
|------|--|----------------------------|-------|-------|-------|
| | | 535X0 | 53530 | 53550 | 53570 |
| M-37 | SKIM MATERIALS OFF WET SPRAY BOOTH WATER | 37 | 37 | 40 | 46 |
| F-6 | ATTACH OR REMOVE STATIC GROUNDS | 54 | 55 | 59 | 51 |
| F-32 | REMOVE MASKING MATERIALS FROM SURFACES | 80 | 88 | 90 | 88 |
| M-11 | DRAIN SHOP AIR LINES | 48 | 35 | 53 | 50 |
| K-10 | APPLY ENAMELS TO SURFACES USING ROLLERS | 37 | 30 | 43 | 33 |
| G-34 | WASH DOWN AIRCRAFT WASHING AREAS | 36 | 47 | 39 | 30 |
| M-20 | LAY DOWN OR PICK UP AIRCRAFT BARRIER PAPER | 54 | 52 | 61 | 47 |
| G-25 | RINSE AIRCRAFT | 36 | 38 | 42 | 28 |
| M-14 | INSPECT AIR HOSES OR FITTINGS | 59 | 45 | 60 | 71 |
| F-23 | LOAD OR UNLOAD SUPPLIES FROM VEHICLES | 55 | 55 | 60 | 52 |
| | | | | | 53630 |

DISCUSSION OF BACKGROUND INFORMATION

Corrosion control specialists as a group do not feel that their job is very interesting or that it utilizes their talents and training very well. Almost half of the first enlistment personnel felt that their job utilized their talents and training very little or not at all. Only one-third felt that their jobs were fairly interesting or better. This feeling had not changed appreciably among second enlistment personnel, although job interest was slightly higher for this group. Three-fourths of the third enlistment group, however, felt that their job utilized talents and training fairly well or better and that their job was interesting. In the total sample over half reported that their job was so-so or less interesting with almost one-third feeling that their job was dull or extremely dull. Four out of 10 of those responding reported that their job utilized their talents and training very little or not at all. Tables 12 and 13 summarize responses to these two questions by members of the first three enlistment groups and for the total sample.

TABLE 12

JOB INTEREST

| | <u>FIRST ENLISTMENT</u> | <u>SECOND ENLISTMENT</u> | <u>THIRD ENLISTMENT</u> | <u>TOTAL SAMPLE</u> |
|-------------|-----------------------------|------------------------------|-----------------------------|-------------------------|
| DULL | 41% | 37% | 9% | 32% |
| SO-SO | 27% | 21% | 14% | 23% |
| INTERESTING | 32% | 42% | 77% | 45% |

TABLE 13

EXTENT TO WHICH JOB UTILIZES TALENTS AND TRAINING

| | <u>FIRST ENLISTMENT</u> | <u>SECOND ENLISTMENT</u> | <u>THIRD ENLISTMENT</u> | <u>TOTAL SAMPLE</u> |
|------------------------------|-----------------------------|------------------------------|-----------------------------|-------------------------|
| VERY LITTLE OR NOT AT ALL | 48 | 46 | 25 | 41 |
| FAIRLY WELL TO PERFECTLY | 52 | 54 | 75 | 59 |

As shown in Table 14, one-third first enlistment group personnel reported that they would or probably would reenlist while almost two-thirds of the second enlistment group planned to reenlist.

TABLE 14
PLANS TO REENLIST

| | <u>FIRST TERM</u> | <u>SECOND TERM</u> |
|---------------------|-------------------|--------------------|
| NO OR PROBABLY NO | 66% | 36% |
| PROBABLY YES OR YES | 34% | 64% |

These estimates correlated rather well with actual reenlistment rates for FY74 and the first five months of FY75 as shown in Table 15.

TABLE 15
ACTUAL REENLISTMENTS

| | <u>FIRST TERM</u> | | <u>SECOND TERM</u> | |
|----------------------|-------------------|-------------|--------------------|-------------|
| | <u>FY74</u> | <u>FY75</u> | <u>FY74</u> | <u>FY75</u> |
| ELIGIBLE TO REENLIST | 226 | 52 | 24 | 39 |
| REENLISTED | 69 | 17 | 18 | 27 |
| PERCENT | 30.5 | 32.7 | 75 | 69.2 |

APPENDIX A

GRP176
CREW CHIEFS

MEMBERS: 96

MAJOR COMMAND: Variety

| <u>SKILL LEVEL</u> | <u>MEMBERS</u> |
|--------------------|----------------|
| 3 | 5 |
| 5 | 31 |
| 7 | 58 |
| 9 | 1 |

MEAN NUMBER TASKS PERFORMED: 245

MEAN GRADE: 5

| <u>PRIMARY DUTIES</u> | <u>PERCENT TIME SPENT</u> |
|--|-------------------------------|
| A-D SUPERVISORY | 25 |
| E ADMINISTRATIVE | 9 |
| K APPLYING PROTECTIVE COATING SYSTEMS | 16 |
| I REMOVING CORROSION AND PROTECTIVE COATINGS | 13 |
| F PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 10 |
| M MAINTAINING CORROSION CONTROL EQUIPMENT | 9 |
| G WASHING AIRCRAFT AND AGE | 7 |

This cluster of supervisors includes three groups of 54, 22, and seven members. Although these groups differ somewhat in time spent on individual tasks, the differences were not of sufficient significance to warrant separate descriptions. Essentially these personnel are working supervisors from all commands who spend two-thirds of their time in the performance of technical tasks. Their jobs are not specialized, but cover the full scope of corrosion control on aircraft and AGE. Supervisory and administrative tasks occupy approximately one-third of their work time. The application of protective coatings and removal of corrosion and protective coatings are the predominate technical tasks performed. The large number of tasks performed is one of the major characteristics which differentiate this cluster from other supervisory clusters.

GRP119
CORROSION INSPECTION, REMOVAL AND TREATMENT SPECIALIST I

MEMBERS: 459

MAJOR COMMAND: Variety

| <u>SKILL LEVEL</u> | <u>MEMBERS</u> |
|--------------------|----------------|
| 3 | 43 |
| 5 | 365 |
| 7 | 51 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 114

MEAN GRADE: 4

| <u>PRIMARY DUTIES</u> | <u>PERCENT TIME SPENT</u> |
|--|-------------------------------|
| K APPLYING PROTECTIVE COATING SYSTEMS | 30 |
| F PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 16 |
| I REMOVING CORROSION AND PROTECTIVE COATINGS | 15 |
| M MAINTAINING CORROSION CONTROL EQUIPMENT | 11 |
| G WASHING AIRCRAFT AND AGE | 7 |
| H INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 7 |

This cluster contains 60 percent of the 5-skill level personnel in the survey sample plus a number of 3- and 7-skill level personnel. The cluster is composed of two groups each with several job types and three independent job types. The minor differences between these various groups and job types are offset, however, by the high overlap between duties and tasks performed by personnel in the cluster and do not, therefore, warrant separate descriptions.

Personnel of this cluster work in a variety of commands both in CONUS and overseas. The work performed is almost identical in terms of duties performed and percent time spent on those duties to the work situation described for the 5-skill level specialist under the analysis of DAFSC groups section of this report.

In general, these specialists perform the full range of corrosion control tasks including inspection for corrosion, removing corrosion and preparing surfaces for application of protective coatings with substantive time spent on each function. Although application of protective coatings occupied approximately 30 percent of the total work time of this group substantial time was also expended in the other major duty areas.

GRP101
TEAM CHIEF/INSPECTOR

MEMBERS: 6

MAJOR COMMAND: SAC 4
PACAF 2

SKILL LEVEL MEMBERS

| | |
|---|---|
| 3 | 0 |
| 5 | 2 |
| 7 | 4 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 86

MEAN GRADE: 5

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|-----|--|----|
| A-D | SUPERVISORY DUTY | 23 |
| K | APPLYING PROTECTIVE COATING SYSTEMS | 21 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 12 |
| E | WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, AND TECHNICAL DATA | 11 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 11 |
| M | MAINTAINING CORROSION CONTROL EQUIPMENT | 7 |
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 7 |
| G | WASHING AIRCRAFT AND AEROSPACE GROUND EQUIPMENT (AGE) | 6 |

This independent job type includes six personnel serving as supervisors or assistant supervisors of small corrosion control crews. This group is very similar to group 176 in duties performed and time spent on duty areas. The scope of the corrosion control program supervised by personnel in group 176 is considerably broader than that supervised by these personnel in terms of metals involved and equipment utilized in the corrosion control program.

GRP075
CORROSION INSPECTION, REMOVAL AND TREATMENT SPECIALIST II

MEMBERS: 153

MAJOR COMMAND: Variety

SKILL LEVEL MEMBERS

| | |
|---|-----|
| 3 | 35 |
| 5 | 108 |
| 7 | 8 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 55

MEAN GRADE: 3

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|---|--|----|
| K | APPLYING PROTECTIVE COATING SYSTEMS | 39 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 20 |
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 13 |
| M | MAINTAINING CORROSION CONTROL EQUIPMENT | 8 |
| G | WASHING AIRCRAFT AND AEROSPACE GROUND EQUIPMENT (AGE) | 6 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 5 |

This cluster includes 12 job-types each differing slightly from the other, but all sufficiently comparable in major duty performance to be described as a group. Primarily this cluster differs from Group 119 in that the average number of tasks performed by group members are less than half the number performed by the members of Group 119. Generally, members of this group primarily concentrate on tasks directly associated with the cleaning and preparation of surfaces, and the application of protective coatings. Less than 40 percent inspect for corrosion whereas in Group 119 over 75 percent perform this task. Similarly, less than half identify types of corrosion while 84 percent of Group 119 personnel perform this task. Analysis of the background information shows that this group uses less equipment, and works with fewer types of metals, corrosion removing compounds and passivating solutions than Group 119.

GRP094
CORROSION INSPECTION AND SURFACE PREPARATION SPECIALIST

MEMBERS: 5

MAJOR COMMANDS: Several

| <u>SKILL LEVEL</u> | <u>MEMBERS</u> |
|--------------------|----------------|
|--------------------|----------------|

| | |
|---|---|
| 3 | 0 |
| 5 | 5 |
| 7 | 0 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 62

MEAN GRADE: 4

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|---|--|----|
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 28 |
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 18 |
| G | WASHING AIRCRAFT AND AEROSPACE GROUND EQUIPMENT (AGE) | 13 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 10 |

This independent job type contains a group of corrosion control specialists who perform a relatively small number of tasks. These specialists spend the largest percentage of their time on tasks from the General Corrosion Control Duty area. The highest percentage of time is spent on cleaning facilities, applying masking materials to surfaces and painting or stenciling signs. Other tasks which are typical of this group include inspection of areas for corrosion, identification of metals and types of corrosion, and removing corrosion and protective coatings. One unique characteristic of this group is that less than 10 percent of any members time is spent in the application of protective coatings.

Av

GRP160
CORROSION INSPECTION AND REMOVAL SPECIALIST

MEMBERS: 5

MAJOR COMMAND: AFSC 5

SKILL LEVEL MEMBERS

| | |
|---|---|
| 3 | 1 |
| 5 | 3 |
| 7 | 1 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 55

MEAN GRADE: 3

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|---|--|----|
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 24 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 20 |
| G | WASHING AIRCRAFT AND AEROSPACE GROUND EQUIPMENT (AGE) | 16 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 10 |
| E | WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, AND TECHNICAL DATA | 10 |

This independent job type contains personnel from Air Force Systems Command who primarily perform periodic inspections of aircraft for corrosion, remove corrosion and protective coatings, using a variety of methods, and clean aircraft. Although 80 percent of the members paint interior surfaces, such as, walls, ceilings, and floors and apply primers using spray methods, very little of the overall work time is spent in performing these tasks. Four of these personnel have less than two years in the career field.

GRP223
TITAN MISSILE CORROSION CONTROL SPECIALIST

MEMBERS: 24

MAJOR COMMAND: SAC 24

SKILL LEVEL MEMBERS

| | |
|---|----|
| 3 | 4 |
| 5 | 16 |
| 7 | 4 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 93

MEAN GRADE: 4

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|---|--|----|
| P | PERFORMING TITAN MISSILE CORROSION CONTROL FUNCTIONS | 23 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 16 |
| K | APPLYING PROTECTIVE COATING SYSTEMS | 16 |
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 16 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 7 |

This job type includes those personnel who are performing non-supervisory corrosion control tasks at Titan missile sites. As would be expected, the duty occupying the highest percentage of time spent is Titan missile corrosion control functions consisting primarily of visually inspecting Titan silo facilities for corrosion and treating corrosion found. All of these personnel spend rather high percentages of time in application of primers and enamels by brush or roller methods while less than 60 percent use spray equipment. A few individuals reported the use of epoxy coatings, however, less than 10 percent used elastomeric or polyurethane coatings. Painting of interior surfaces, such as, walls, ceilings, and floors occupied a substantial amount of time of three-fourths of these personnel.

GRP251
TITAN/MINUTEMAN CORROSION CONTROL SPECIALIST

MEMBERS: 5

MAJOR COMMAND: SAC 5

| <u>SKILL LEVEL</u> | <u>MEMBERS</u> |
|--------------------|----------------|
|--------------------|----------------|

| | |
|---|---|
| 3 | 0 |
| 5 | 4 |
| 7 | 1 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 110

MEAN GRADE: 5

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|---|--|----|
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 16 |
| K | APPLYING PROTECTIVE COATING SYSTEMS | 16 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 16 |
| P | PERFORMING TITAN MISSILE CORROSION CONTROL FUNCTIONS | 10 |
| O | PERFORMING MINUTEMAN CORROSION CONTROL FUNCTIONS | 10 |

This job-type includes a small group of specialists at Vandenberg who perform corrosion control for both Minuteman and Titan missiles. With the exception of the addition of Minuteman corrosion control functions, this group is very similar to Group 223, however, more time is spent in the use of rollers and brushes in applying primers and enamels to surfaces. In addition, driving government vehicles is a major task for the members of this group.

GRP309
TITAN MISSILE CORROSION CONTROL SUPERVISOR

MEMBERS: 6

MAJOR COMMAND: SAC

SKILL LEVEL MEMBERS

MEAN NUMBER SUPERVISED: 7

| | |
|---|---|
| 3 | 0 |
| 5 | 0 |
| 7 | 6 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 166

MEAN GRADE: 6

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|-----|--|----|
| A-D | SUPERVISORY | 26 |
| P | PERFORMING TITAN MISSILE CORROSION CONTROL FUNCTIONS | 14 |
| E | WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, AND TECHNICAL DATA | 12 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 11 |
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 10 |
| K | APPLYING PROTECTIVE COATING SYSTEMS | 8 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 6 |

This job type includes personnel who serve as corrosion control supervisors and quality control inspectors in Titan missile programs. Visual corrosion control inspections of the various missile facilities are the most unique characteristics of these positions.

GRP117
MINUTEMAN MISSILE CORROSION CONTROL SPECIALIST

MEMBERS: 30

MAJOR COMMAND: SAC

SKILL LEVEL MEMBERS

| | |
|---|----|
| 3 | 4 |
| 5 | 21 |
| 7 | 5 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 75

MEAN GRADE: 4

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|---|--|----|
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 21 |
| T | REMOVING CORROSION AND PROTECTIVE COATINGS | 20 |
| O | PERFORMING MINUTEMAN CORROSION CONTROL FUNCTIONS | 19 |
| K | APPLYING PROTECTIVE COATING SYSTEMS | 18 |

This job type is made up of corrosion control specialists who perform inspections and carry out the corrosion control program at Minuteman missile sites. Many tasks performed are very similar to other specialist jobs with the exception that some of the equipment on which corrosion control is performed differs considerably to that which corrosion control specialists are normally familiar. One unique characteristic of this group is that most protective coatings are applied by brush or aerosol can. Less than one-fourth reported use of conventional paint spray guns while 96 percent used aerosol spray cans and 86 percent used paint brushes and rollers. Primers, enamels, and lacquers were the primary coatings used although varnish was also used by slightly more than one-half of the group.

GRP126
TRAINING INSTRUCTORS

MEMBERS: 6

MAJOR COMMAND: ATC

SKILL LEVEL MEMBERS

| | |
|---|---|
| 3 | 0 |
| 5 | 3 |
| 7 | 3 |

MEAN NUMBER TASKS PERFORMED: 87

MEAN GRADE: 6

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|---|---|----|
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 22 |
| M | MAINTAINING CORROSION CONTROL EQUIPMENT | 17 |
| D | TRAINING | 17 |
| G | WASHING AIRCRAFT AND AEROSPACE GROUND EQUIPMENT (AGE) | 11 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 10 |
| K | APPLYING PROTECTIVE COATING SYSTEMS | 9 |

This group contains training instructors from ATC who teach in the formal course. In addition to conducting training, these personnel perform many of the technical tasks of corrosion control during the instruction and demonstration phases of the training.

GRP082
SPRAY PAINTERS I

MEMBERS: 7

MAJOR COMMANDS: TAC 3
SAC 2
USAF 1
ADC 1

| <u>SKILL LEVEL</u> | <u>MEMBERS</u> |
|--------------------|----------------|
| 3 | 3 |
| 5 | 4 |
| 7 | 0 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 31

MEAN GRADE: 3

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|---|---|----|
| K | APPLYING PROTECTIVE COATING SYSTEMS | 61 |
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 9 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 9 |
| M | MAINTAINING CORROSION CONTROL EQUIPMENT | 6 |
| G | WASHING AIRCRAFT AND AEROSPACE GROUND EQUIPMENT (AGE) | 5 |

This small job type includes specialists who perform a small number of tasks, most of which involve preparation for and application of protective coatings. One fact concerning this group is that although over half have less than two years service, 85 percent apply polyurethane and epoxy coatings using spray methods, tasks which are rated among the most difficult in the inventory.

GRP093
AIRCRAFT WASHERS

MEMBERS: 6

MAJOR COMMANDS: SAC 6

SKILL LEVEL MEMBERS

| | |
|---|---|
| 3 | 3 |
| 5 | 3 |
| 7 | 0 |

MEAN NUMBER TASKS PERFORMED: 41

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|---|--|----|
| G | WASHING AIRCRAFT AND AEROSPACE GROUND EQUIPMENT (AGE) | 36 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 23 |
| K | APPLYING PROTECTIVE COATING SYSTEMS | 13 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 12 |
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 9 |

This group is made up of four personnel with less than 12 months service and two with from 37 to 48 months service. All have been in their present job for less than one year. One-half are trainees while the others have achieved their 5-skill level.

Although performing a variety of corrosion control tasks, this group is characterized by Duty G (Washing Aircraft and Aerospace Ground Equipment-AGE) which occupies over one-third of the time.

GRP069
SPRAY PAINTERS II

MEMBERS: 5

MAJOR COMMANDS: TAC 2
SAC 1
PACAF 1
ADC 1

| <u>SKILL LEVEL</u> | <u>MEMBERS</u> |
|--------------------|----------------|
| 3 | 0 |
| 5 | 4 |
| 7 | 0 |
| 9 | 1 |

MEAN NUMBER TASKS PERFORMED: 20

MEAN GRADE: 4

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|---|--|----|
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 38 |
| K | APPLYING PROTECTIVE COATING SYSTEMS | 35 |
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 10 |
| M | MAINTAINING CORROSION CONTROL EQUIPMENT | 4 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 4 |

This small group is composed of personnel who perform few tasks. Four of the five are 5-skill level specialists while one is a superintendent. All of the group perform tasks directly related to preparing surfaces and applying protective coatings using spray methods. Primary differences between this group and group 082 is that members spend much more time in applying and removing masking materials and performing general corrosion control tasks than members of Group 082 while Group 082 is primarily concerned with painting tasks. Polyurethane coatings are applied by over 85 percent of group 082 but not by members of this group.

GRP177
FABRICATION BRANCH CHIEFS I

MEMBERS: 35

MAJOR COMMANDS: SAC 12
TAC 9
PACAF 3
MAC 4
ATC 2
ADC 2
AFSC 1

| <u>SKILL LEVEL</u> | <u>MEMBERS</u> |
|--------------------|----------------|
| 3 | 0 |
| 5 | 0 |
| 7 | 4 |
| 9 | 31 |

MEAN NUMBER TASKS PERFORMED: 81

MEAN GRADE: 8

| <u>PRIMARY DUTIES</u> | <u>PERCENT TIME SPENT</u> |
|--|-------------------------------|
| A-D SUPERVISORY | 69 |
| E WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, AND TECHNICAL DATA | 21 |
| H INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 2 |

This group includes top level supervisors within this career ladder. Most are Chiefs of Fabrication Branches and supervise corrosion control through an intermediate shop supervisor. They usually supervise a number of other shops in addition to corrosion control. As supervisors and managers these personnel perform almost no technical tasks, leaving these functions to subordinates. Tasks which occupy the highest percentage of work time for this group include coordination with other Field Maintenance Shops on work activities; evaluating inspection reports, preparing drafts of outgoing correspondence or reports, and counseling personnel on personal or military related problems. Almost all tasks performed by personnel of this group reflect a knowledge requirement of management and supervisory functions rather than of the day-to-day technical activities of corrosion control.

GRP171
SHOP CHIEFS I

MEMBERS: 10

MAJOR COMMANDS: SAC 4
PACAF 3
TAC 2
ATC 1

| <u>SKILL LEVEL</u> | <u>MEMBERS</u> |
|--------------------|----------------|
| 3 | 0 |
| 5 | 0 |
| 7 | 8 |
| 9 | 2 |

MEAN NUMBER TASKS PERFORMED: 70

MEAN GRADE: 6

PRIMARY DUTIES

PERCENT
TIME SPENT

| | |
|---|----|
| A-D SUPERVISORY | 74 |
| E WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES AND TECHNICAL TASKS | 21 |

This group is made up of NCOICs of corrosion control shops. In this capacity, these personnel supervise corrosion control specialists and crew chiefs performing the day-to-day activities of corrosion control. As shown above, this group of personnel are almost exclusively engaged in the performance of supervisory and administrative tasks, and rely on subordinates to perform the technical functions of corrosion control. Tasks which occupy the most time of this group include Plan or schedule work assignments, develop or improve work methods or procedures, counsel personnel on problems, coordinate with military public health on industrial physicals, and plan or coordinate OJT training.

GRP144
SHOP CHIEFS II

MEMBERS: 52

MAJOR COMMAND: SAC 17
TAC 10
MAC 7
USAFE 4
ATC 4

| SKILL LEVEL | MEMBERS |
|-------------|---------|
| 3 | 0 |
| 5 | 1 |
| 7 | 42 |
| 9 | 7 |

MEAN NUMBER TASKS PERFORMED: 138

MEAN GRADE: 7

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|-----|--|----|
| A-D | SUPERVISORY | 52 |
| E | WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, AND TECHNICAL DATA | 21 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 7 |
| I | REMOVING CORROSION AND PROTECTIVE COATINGS | 4 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 4 |

These supervisors are in charge of corrosion control shops and directly supervise corrosion control specialists. Although essentially the same as group 171, personnel in this group perform more tasks. In addition, this group spends less time on general supervision and more in performing tasks which are directly related to corrosion control. For example, over 75 percent of this group identify causes of corrosion. Only 10 percent of group 171 performed this task. Eighty percent of this group identified causes of protective coating failures. This task was performed by only 10 percent of Group 171. These supervisors are actively involved in the technical phases of corrosion control including the on-the-job inspections and evaluation of corrosion and protective coating systems while members of group 171 are more involved with supervisory and managerial aspects of corrosion control.

GRP107
ASSISTANT SHOP CHIEFS

MEMBERS: 10

MAJOR COMMANDS: Variety

| <u>SKILL LEVEL</u> | <u>MEMBERS</u> |
|--------------------|----------------|
|--------------------|----------------|

| | |
|---|---|
| 3 | 0 |
| 5 | 3 |
| 7 | 7 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 82

MEAN GRADE: 5

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|-----|--|----|
| E | WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, AND TECHNICAL DATA | 30 |
| A-D | SUPERVISORY | 38 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 9 |
| K | APPLYING PROTECTIVE COATING SYSTEMS | 7 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 6 |

This group primarily contains assistant NCOICs of corrosion control shops and specialists who work in corrosion control shops as administrative assistants. Characteristically, personnel of this group spend almost one-third of their time in completing or working with forms, records, reports, directives, and technical data, and over one-third of their time on supervisory tasks.

Eight of the 10 most time consuming tasks performed by members of this group concern record keeping and administrative functions. Many of the supervisory tasks are also in the area of administration, such as, establishing or maintaining publication libraries, preparing requisitions for supplies or equipment, and establishing or updating bench stock requirements.

GRP084
SHOP CHIEF III

MEMBERS: 8

MAJOR COMMANDS: SAC 6
TAC 3
PACAF 1

SKILL LEVEL MEMBERS

| | |
|---|---|
| 3 | 0 |
| 5 | 0 |
| 7 | 8 |
| 9 | 0 |

MEAN NUMBER TASKS PERFORMED: 82

MEAN GRADE: 6

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|-----|--|----|
| A-D | SUPERVISORY | 45 |
| E | WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES AND TECHNICAL DATA | 14 |
| H | INSPECTING AIRCRAFT, AEROSPACE GROUND EQUIPMENT (AGE), AND MISSILE FACILITIES | 11 |
| I | REMOVING CORROSION CONTROL EQUIPMENT | 7 |
| M | MAINTAINING CORROSION CONTROL EQUIPMENT | 6 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 6 |

This group includes NCOICs of corrosion control shops. In general, the members of this group perform work very similar to that performed by Group 144, however, the shops supervised, are for the most part smaller shops. Personnel of Group 144 generally supervise seven or more subordinates, while personnel of this group normally supervise less than seven.

Another significant difference between these two groups is that members of Group 144 perform an average of 56 more tasks than members of this group. Most of these tasks are in supervisory and administrative duty areas and reflect the additional supervisory responsibilities assigned to Group 144 personnel.

Axx

GRP044
FABRICATION BRANCH CHIEFS II

MEMBERS: 6

MEAN NUMBER SUPERVISED: 6

SKILL LEVEL MEMBERS

| | |
|---|---|
| 3 | 0 |
| 5 | 0 |
| 7 | 2 |
| 9 | 4 |

MEAN NUMBER TASKS PERFORMED: 31

MEAN GRADE: 8

PRIMARY DUTIES

PERCENT
TIME SPENT

| | | |
|-----|--|----|
| A-D | SUPERVISORY | 32 |
| E | ADMINISTRATIVE | 9 |
| M | MAINTAINING CORROSION CONTROL EQUIPMENT | 5 |
| F | PERFORMING GENERAL CORROSION CONTROL FUNCTIONS | 2 |

This small group includes a few top level supervisors who spend over 90 percent of their time in supervisory tasks, primarily in planning and scheduling work and coordinating work with other shops. Very little technical work is performed and those tasks which are performed are almost exclusively inspection of equipment or facilities.

These positions differ from Fabrication Branch Chiefs I, primarily in the number of tasks performed, and in the high concentration of time on organizing, planning and coordinating tasks, which occupy over 68 percent of this groups time, but less than 25 percent of the time of Fabrication Branch Chiefs I.